they are related as multiples. In order to composition we must have the elements in their fixed proportions, and as the result of decomposition we come back to elements in a numerical relation. In the same science, we have a numerical law in the proportions according to volumes in which gases combine.

(2.) Turning to MINERALOGY, we find the commencement of those wondrous forms which play so important a part in the organic kingdoms. A careless observer is apt to conclude that no regularity exists in the shapes of the solid bodies which fall under our notice in nature. But on a more careful inspection, it will be found that the greater number of bodies which have in themselves no regular external form, present, when broken up, distinct traces of a regular or crystalline texture, and the impression is left on the mind that the entire mass is an aggregate of an infinity of small crystals banded together. It is certain that the greater number of minerals do assume certain geometric forms with fixed angles and proportions, and that the same mineral in the same circumstances always assumes the same crystalline form. These crystals are bounded by plane faces; and where the crystal is fully formed, every face or surface has opposed to it a parallel face or surface. The number of regular forms which crystals may assume is very great, but these have been reduced to six primitive forma, which have all their defined angles and prescribed number of sides.

(3.) Turning now to PHYSIOS and ASTRONOMY, we find that the science of Acoustics is founded on the perceived relation between sound and number. The science of Optics is expressed in laws relating to angles and numbers. The angle of reflection is found to be equal to the angle of incidence; and we have numerical tables setting forth the powers of refraction. The law of gravitation itself is a law of numbers. As

Sir John Herschel has remarked, " the law of gravitation, the most universal truth at which human reason has yet arrived, expresses not merely the general fact of the mutual attraction of all matter, not merely the vague statement that its influence . decreases as the distance increases, but the exact numerical rate at which that decrease takes place." The bodies submitted to this law of numbers are so arranged as to produce laws of form ; they have a particular spheroidal shape, and move in elliptic curves. The three famous laws of Kepler, which led directly to